BOSCH

Invented for life

Bosch Video Management System Software V. 2

- ▸ **Enterprise-class Client/Server based video management system**
- ▸ **System-wide user management, alarm handling, health monitoring, and configuration**
- ▸ **Full virtual matrix capabilities, including analog monitor support and CCTV keyboard control**
- ▸ **Superior alarm handling with alarm priorities and selectable user group distribution**
- ▸ **Advanced user interface concepts for effective and efficient operation**
- ▸ **Bosch Workstations and Servers recommended for optimal system reliability and performance**

The Bosch Video Management System is a unique enterprise IP video security solution that provides seamless management of digital video, audio, and data across any IP network. It is designed to work with Bosch CCTV products as part of a total video security management system. You can integrate your existing components into one easy-to-manage system, or use our full-line capabilities and benefit from a complete security solution based on cutting-edge technology and years of experience.

The Bosch Video Management System is installed on Microsoft Windows 32-bit Operating Systems.

We recommend using Bosch Workstations and Servers. They are fully tested and optimized for Bosch Video Management System.

System Overview

The Bosch Video Management System contains the following software components:

- Central Server software provides management, monitoring, and control of the entire system
- Virtual Recording Manager (VRM) and Network Video Recorder (NVR) services provide recording and playback management of video, audio, and data
- Configuration Client software provides the user interface for system configuration and management
- Operator Client software provides the user interface for system monitoring and operation

These software components can be run together on a single PC for small systems or on separate PCs and servers for large systems.

Bosch Video Recording Manager (VRM) provides a Distributed Network Video Recorder solution, eliminating the need for dedicated NVRs, and signaling the second generation of IP Network video recording. The VRM provides load balancing and failover for the iSCSI storage and makes it easy to add additional iSCSI storage later on. VRM introduces the concept of a storage virtualization layer. This abstraction layer enables VRM to manage all of the individual disk arrays in the entire system as a single "virtual" common pool of storage, which is intelligently allocated as needed.

Multiple NVRs can be used to suit any size application. NVRs can be designated to operate in failover mode, with a single failover NVR able to serve a large number of primary NVRs for cost effective redundancy. Additionally you can configure a Redundant NVR for each Primary NVR. This Redundant NVR records the same audio and video data as the Primary NVR. The recording settings of this Redundant NVR are synchronized with the Primary NVR.

The usage of multiple client workstations offers great scalability.

Functions

Deployment

- Updates of Operator Client and Configuration Client automatically deployed from Central Server
- Supports all Bosch MPEG-4 encoders, decoders, IP Cameras, IP AutoDomes, Allegiant, DiBos, Bosch POS/ATM Bridge, and DiBos-compatible ATM Bridge

Configuration

- Automatic discovery of IP devices
- Automatic IP address assignment of IP devices
- Batch firmware updates of IP devices
- Failover NVR configurable to backup Primary NVRs
- Redundant NVR
- Configurable Logical Tree
- Predefined camera sequences
- "Automatic Sequences" created by multiple selection and drag and drop to Image panes
- Four configurable user-event buttons

User Interface

- Zoomable sitemaps with links, devices, sequences, and Command Scripts
- Up to 4 PC monitors supported per Workstation
- CCTV keyboard support, connected to either Workstation or IP decoder
- Flexible Image panes allow any combination of video window sizes and layouts
- Any live Image pane can be switched to instant playback
- Multiple instant playback Image panes
- Image windows can display live video, instant playback video, text documents, maps, or web pages
- Device states shown by icons, including network-connection loss, video loss
- Favorites tree can be individually configured per user
- Favorites tree can include complete views with Image pane layouts and camera assignments
- Camera selection by double-click or drag and drop from site maps, Logical Tree, or Favorites Tree
- Decoders can be organized in Analog Monitor Walls
- Control of analog monitors connected to decoders via drag and drop
- Synchronized playback of up to 16 NVR cameras and up to 4 VRM cameras
- Sophisticated multi-camera timeline allows easy, graphical searching of stored video
- Timeline colors indicate recording status – normal recording, alarm recording, motion recording, protected recording, and audio recording (not for cameras managed by a VRM)
- Easy clip selection by dragging hairlines in the timeline
- Selected clips can be exported to DVD, network drives, or USB sticks with a few mouse clicks
- Flexible search works across all NVRs and DVRs connected to the system
- Post-recording motion search allows changes to selected areas of the image to be easily located
- Forensic Search allows the usage of Intelligent Video Analysis (IVA) algorithms on the recorded video
- Two audio listening options – selected channel only, or multiple simultaneous channels
- Audio Intercom functionality

Scheduling

- Up to 10 Recording schedules with Holidays and Exception Days
- Task Schedules with Holidays, Exception Days, and recurring schedule support
- Per camera settings for minimum and maximum recording times
- Per camera, per recording schedule frame rate and quality settings for live, normal recording, motion recording, and alarm recording

Event Handling

- Event list with device events (e.g. video loss), system events (e.g. disk full), SNMP traps from network devices (e.g., heavy network traffic), subsystem events (e.g. Allegiant alarm), user events (e.g. logon failure), schedule events (e.g. every Tuesday at 10:15), etc.
- Compound events (combining events with Boolean logic)
- Event duplication allowing separate handling
- Event allocation to user groups
- Schedule dependent alarm generation
- Schedule dependent event logging
- Schedule dependent event-generated Command Script invocation

Alarm Handling

- Alarms can trigger alarm-mode recording for any cameras
- 100 alarm priorities
- Selective auto-popup on alarm
- Alarms displayed in separate alarm window
- Up to 5 Image panes per alarm with live or playback video, sitemaps, documents, or web pages displayed in an "alarm row", with highest priority alarms on top
- Audio file per alarm
- Workflow with user instructions and user comments, optionally forced before clearing
- Email or SMS notification on alarm
- Alarm display on analog monitor walls
- Alarm auto clear options either time or state dependent

User Management

- LDAP compatible for integration with enterprise user management systems such as Microsoft Active Directory
- Access to system resources individually controlled per user group
- Logical Tree customized per user group – users only see devices for which they have access
- User group rights for protecting, deleting, exporting, and printing video
- User group rights for Logbook access
- User group priority assignment for PTZ control and Allegiant camera access
- Individual per-camera privileges assignable per user group for live access, playback, audio, meta data display, dome control
- Dual-authorization logon – special privileges and priorities granted when two users log on together

System Monitoring

- System-wide health monitoring, including cameras, computers, software, and network equipment

- Network equipment and other third-party devices monitored with SNMP

Customization and Interfacing

- Custom Command Scripts can control all system functionality
- Built in Command Script editor supporting C# and Visual Basic .Net
- External software can trigger events and send metadata via "Virtual Inputs"
- Any .Net programming language (C#, JScript, etc.) or COM programming language (C++, Visual Basic, etc.) can be used to trigger Virtual Inputs
- Other systems can control the virtual matrix with Allegiant CCL commands that can be sent via RS232
- Compatible with Bosch Building Integration System
- Compatible with Advantech ADAM-6000 series Digital Input / Output modules

Parts Included

- The following are delivered on DVD:
  - Installation program that can selectively install all components (Central Server software, Network Video Recorder software, Video Recording Manager software, Configuration Client software, Operator Client software) in all supported languages
  - Configuration Manual (PDF format) in all supported languages
  - Operator's Manual (PDF format) in all supported languages
- Software license key document
- Quick Start Manual in English, French, German, Simplified Chinese and Spanish

Technical Specifications

System Specifications

Maximum number of workstations simultaneously viewing the same camera	Multicast: 20 Unicast: 5
Supported languages	English, German, Dutch, Italian, Portuguese, French, Spanish, Simplified Chinese, Traditional Chinese, Russian, Hungarian, Czech, Danish, Finnish, Greek, Norwegian, Polish, Swedish, Thai, Turkish, Korean, and Arabic
Anti-Virus software must not perform a full-scan. Performance may decrease depending on configuration.	
Event reaction time	<1 second, assuming sufficient network bandwidth
Alarm reaction time (incl. 1 live Image pane, 1 instant playback Image pane and 1 map Image pane):	2 seconds, assuming sufficient network bandwidth

Bandwidth requirements	Min. 1 Gbps for connections between: Operator Client to Central Server Operator Client to NVR/VRM/DiBos Central Server to NVR/VRM/DiBos

Required open ports

Connection from Central Server and Client Workstations to NVRs:
Two selectable TCP ports (default 5390 and 5391)

Connection to Operator Client Workstations by BVMS SDK:
One selectable TCP port (default 5394)

Connection from Central Server to SMTP (for email notifications):
TCP Port 25

Connection to Bosch encoders and decoders:
Control channel: TCP ports 80 and 1756
Network scan: UDP ports 1757 and 1758
Multicast detection: one selectable UDP port (default 1900)
Multicast video transmission:
For each encoder audio or video stream, 1 selectable UDP port
Unicast UDP transmission: UDP ports dynamically assigned in the range from 1024 to 65000

Connection to DiBos DVRs (uses DCOM):
TCP Port 135 plus four TCP ports and four UDP ports dynamically assigned in the range from 1025 to 65535

Central Server Specifications

Maximum number of sustained events per second	For highest performance server, e.g. MHW- SL5M4: 5,000 events at peaks 2,500,000 events/h 500,000 events/h written to the system log (Logbook)
Central Server Redundancy	Available with hardware and software solutions upon request. Please contact Bosch Design Engineer for all redundancy solutions.

NVR Specifications

Maximum number of cameras and data rate per NVR, for advanced performance server, e.g. MHW-SM5M2 and Bosch DVA-8K,DVA-16K (AV multistream on, rebuild priority low)

Continuous or motion or alarm recording and 4 playback clients with 4 Image panes each:	64 cameras @ 25 IPS / 4 CIF / 2 Mbps
Continuous (1IPS) and motion or alarm recording and 4 playback clients with 4 Image panes each:	Continuous recording: 64 cameras @ 1 IPS / 2 CIF / 1,5 Mbps Motion or alarm: 64 cameras @ 25 IPS/ 4 CIF / 2 Mbps
Motion with pre-motion and alarm with pre-alarm recording and 4 playback clients with 4 Image panes each:	Pre-motion / alarm recording: 64 cameras @ 1 IPS / 2 CIF / 1,5 Mbps Motion / alarm: 64 cameras @ 25 IPS / 4 CIF / 2 Mbps
Redundancy	Failover NVR can be assigned to take over for a failed NVR. Multiple Primary NVRs can be assigned to the same Failover NVR. Redundant NVR can be assigned to a Primary NVR. NVR Redundancy available with hardware and software solutions upon request. Please contact Bosch Design Engineer for all redundancy solutions.
Maximum number of Primary NVRs serviced by a Failover NVR	2
Maximum number of NVRs per Central Server	2 For higher camera numbers use VRM.

VRM Specifications

Maximum data rate per iSCSI	For Bosch DVA-12TK: 200 Mbps
Maximum IP cameras/encoders per iSCSI	For Bosch DVA-12T: 48 concurrent iSCSI connections For Bosch-NetApp DSA Series: 128 concurrent iSCSI connections
Maximum number IP cameras/encoders channels per VRM	500
Max. number of Replay Sessions	32
Supported Devices	MPEG-4 BVIP X series encoders Dinion IP series cameras

Minimum Client Workstation PC Requirements

Operation System	Windows XP Professional, Service Pack 3 (32-bit only)
CPU	Intel Core 2 Duo 2.66 GHz or greater
RAM	2 GB or greater
Free disk space	500 MB
Network card	1000Base-T

Display Resolution	Minimum per monitor 1024x768, 1280x1024 or greater recommended
Recommended Graphics Cards	2 monitors, standard performance: nVidia FX 1700 2 monitors, high performance: nVidia FX 3700 nVidia FX 4800 4 monitors, standard performance: nVidia Quadro NVS 440 4 monitors, high performance: - nVidia FX 1700 x2

Minimum Central Server PC Requirements

Operation System	Windows XP Professional, Service Pack 3 (32-bit only), Window 2003 Server, Service Pack 2 (32-bit only)
CPU	Intel Dual-Core Xeon 2.66 GHz
RAM	4 GB or greater
Free disk space	15 GB
Network card	1000Base-T
Display Resolution	1024x768 or greater

Minimum NVR Server PC Requirements

Operation System	Windows XP Professional, Service Pack 3 (32-bit only), Windows 2003 Server, Service Pack 2 (32-bit only)
CPU	Intel Dual-Core Xeon 2.66 GHz
RAM	2 GB or greater
Free disk space	500 MB + Video Storage
Hard disk drives	Minimum: separate partition for video storage Separate drive for video storage recommended
Network card	1000Base-T
Display Resolution	1024x768 or greater

Minimum VRM Server PC Requirements

Operation System	Windows XP Professional, Service Pack 3 (32-bit only), Windows 2003 Server, Service Pack 2 (32-bit only)
CPU	3 GHz Intel Pentium 4 or greater, 3 GHz Intel Xeon or greater recommended
RAM	Minimum 2 GB
Free disk space	500 MB
Network card	1000Base-T
Display Resolution	1024x768 or greater

Device Compatibility

Analog Matrix Switch	Bosch Allegiant series, firmware 8.75 or greater and Master Control Software version 2.80 or greater
CCTV Keyboard	Bosch Intuikey (KBD-Universal or KBD-Digital), firmware version 1.82 or greater
Digital I/O	Digital I/O Advantech ADAM-6050, ADAM-6052, ADAM-6060 ,ADAM-6066
Digital Video Recorder	DiBos, firmware version 8.6 Maximum 50 DiBos recorders per Central Server
USB to Serial adapter	Belkin serial adapter cable F5U103vea
Ethernet to Serial adapter	Comtrol DeviceMaster RTS 4-Port
IP Devices	All Bosch MPEG4 encoders, decoders, IP cameras, and IP Autodomes. Bosch VIP 10 is no longer supported.

Ordering Information

OPC Server Connection	**MBV-FOPC-20**

Ordering Information

Demoversion - Non Expandable	**MBV-BDEM-20**
Lite-32-Edition - Non Expandable Supports 32 Cameras, 2 Workstations, 1 CCTV Keyboard, 0 DVRs - Non Expandable	**MBV-BLIT32-20**
Lite-64 Edition - Non Expandable Supports 64 cameras, 4 Workstations, 2 CCTV Keyboards, 0 DVRs – Non Expandable	**MBV-BLIT64-20**
Professional Edition Supports 8 Cameras, 2 Workstations, 1 CCTV Keyboard, 1 DVR All MBV-X* and MBV-F* can only be combined with the Professional Edition.	**MBV-BPRO-20**
1 Channel Expansion Expansion, order the exact number required. For example, if you order 128 units you can use 128 cameras/decoders in your Bosch VMS. Only those cameras need be counted which are shown in the Logical Tree.	**MBV-XCHAN-20**
1 Workstation Expansion Expansion, order the exact number required.	**MBV-XWST-20**
1 DVR Expansion Expansion, order the exact number required.	**MBV-XDVR-20**
1 CCTV Keyboard Expansion Expansion, order the exact number required.	**MBV-XKBD-20**
1 Failover NVR Expansion Expansion, order the exact number required.	**MBV-XFON-20**
1 Redundant NVR Expansion Expansion, order the exact number required.	**MBV-XRN-20**
1 Forensic Search Expansion Expansion, order the exact number required.	**MBV-XFOREN-20**
Allegiant Matrix Connection	**MBV-FALG-20**
ATM/POS Connection	**MBV-FATM-20**